The single article contributed by Sir James Paget on "Old Age" is, as one would expect, a model of its kind, clear, philosophic, and eminently suggestive. He calls attention to the fact that the generally accepted belief as to the danger of hemorrhage in the old is erroneous, unless the patient be very infirm or unsound. Anæsthetics, he considers, are well borne, but in strange contrast to the statement that elderly people are apt to have weak hearts, he prefers chloroform to ether, as less apt to excite bronchial irritation or pulmonary congestion. While these objections to the use of ether are, to a certain extent, valid, certainly in this country ether would be preferred on account of its non-depressing action upon the heart. Why the old should be less apt to suffer from septic poisoning or pyæmia we cannot understand, since in them the eliminative organs are so apt to be inefficient—notably the kidneys—which certainly in sapræmia seem to be the chief aids in the elimination of the poison. Coming from so eminent an authority, and doubtless the result of an extended personal experience, we can only accept it as a fact. It certainly must be explainable on different grounds from the well-known immunity from septic troubles the young enjoy, which is doubtless due to the healthy condition of all their tissues, especially those of the emunctories.

We could fill page after page with comments on the many good, and the fewer bad points of this work, but we must close with the earnest recommendation to our readers that they buy and read the book, feeling confident that our favorable judgment will not be reversed, provided the intentions and scope of the work are constantly kept in mind.

C. B. N.

HYPERALIMENTATION IN PHTHISIS.

DIE UEBERNÄHRUNG BEI DER LUNGENSCHWINDSUCHT. Von DR. E. PEIPER, Greifswald. (*Deutsches Archiv für klin. Med.*, 37 Bd. S. 377.)

HYPERALIMENTATION IN PHTHISIS. By DR. E. PEIPER.

USVOYENIYE I OBMEN AZOTISTUIKH VESHCHESTV PRI KORMLENII CHAKHOTOCHNUIKH PO SPOSOBU DEBOVE' A. By M. G. KURLOFF. (*Vratch*, No. 37, 1885.)

ASSIMILATION OF NITROGENOUS SUBSTANCES IN THE HYPERALIMENTATION OF PHTHISIS PATIENTS BY DEBOVE'S METHOD. By M. G. KURLOFF.

SINCE Debove's communication to the Medical Society of the Paris Hospitals, in November, 1881, in which brilliant results were described as having been obtained by the treatment of patients in advanced stages of phthisis by means of forcible feeding (*hyperalimentation*, *sur-alimentation*, or *gavage*), but little attention has been paid to his method by English and American physicians. Several communications on the subject, however, have from time to time appeared in Continental journals by Dujardin-Beaumetz, Mesnet, Desnos, Pennel, Broca and Wins, Schreiber, Ferrand, Bull, Voitoff, and by the two writers whose papers are named at the head of this article, and who seem to have worked independently of one another, their papers being published about the same time.

Debove's system has for its object the restoration of the tissues, weakened by the disease, to their pristine condition, in which they are far less capable of acting as breeding ground for tubercle bacilli. This is accomplished by compelling the patient to take a large quantity of highly nutritious food, consisting of meat powder (prepared by drying finely minced meat on metal plates over the fire) suspended in lukewarm milk with the addition of eggs.

Dr. E. Peiper treated fourteen phthisis patients in the Greifswald Clinic with Debove's nutritive mixture. Some difficulty was experienced at first, owing to the objection of the patients to the stomach-tube. He then succeeded in persuading them all to swallow the food themselves. At first half a litre of milk, twenty-five grammes of meat powder, and several eggs were given at meal-times twice a day. These quantities were gradually increased, till from 200 to 300 grammes of meat powder were taken some four times a day, vegetables and wines were also given. Twelve of the patients increased from five to twenty-two pounds in weight. Cough and expectoration in all cases diminished, in five cases the night-sweats decreased, and in three more ceased. Gouty symptoms appeared in three cases.

Dr. M. G. Kurloff set before himself a much more difficult task than the mere repetition of Debove's clinical observation on the general improvement produced in phthisis patients by the method of forced feeding, though incidentally, as it were, his observations on this point accord with those of Debove, Peiper, and others. His main object, however, was to define the nature and extent of the change caused by hyperalimentation in the assimilation of nitrogen, both during the time the treatment was being carried out, and after it had been stopped. For this purpose he selected five undoubted cases of phthisis, all of whom suffered from want of appetite, diarrhœa, pyrexia, cough, and expectoration, which contained Koch's bacilli. The patients were first put upon the ordinary hospital diet, consisting of porridge for breakfast, soup with meat for dinner, soup for supper, and a daily allowance of "half-white bread." The composition of this diet was approximately known, and, therefore, a calculation could be made of the nitrogen ingested, analyses of the urine and feces giving the amount excreted.

"The data thus obtained were of course not novel, but merely confirmed the well-known fact that the quantity of nitrogen ingested by the body in phthisis is less than that excreted, the difference varying from day to day. In all cases, however, the nitrogen ingested and excreted by phthisis patients is far below the amounts observed in healthy persons."

Hyperalimentation was then commenced and continued for a period varying from six to eleven days. In some of the cases Debove's plan of introducing the food through a stomach-tube was adopted, no difficulty being found in passing the tube, as the pharynx was brushed over with a one per cent. solution of cocaine, which prevented the patients feeling the discomfort usual during the introduction of œsophageal instruments. This system of anæsthetizing the pharynx with cocaine had also been made use of by another Russian observer, Dr. V. E. Nyeshel, who, in carrying out a series of investigations on digestion requiring the introduction of the stomach-tube, found that when he painted the pharynx with a five per cent. solution of chlorohydrate of cocaine a few minutes before the introduction of the tube, the latter was swallowed easily and quickly, no unpleasant results being observed. (*Dissertation for Doctor's Degree*, St. Petersburg, March 31, 1885.)

Dr. Kurloff was, however, in some cases enabled to dispense with mechanical assistance altogether, the patients taking the nutrient mixture from tumblers. This mixture was composed of meat powder suspended in milk, the whole having a consistency somewhat greater than that of ordinary chocolate. The meat powder was not prepared precisely as in Debove's experiments, but was made from meat from which all the juice had been expressed, a waste product, in fact, in the manufacture of meat juice, and, consequently, an exceedingly economical source from which to obtain the meat powder. 700 cubic centimetres of this mixture were given at a time, 400 grammes of meat powder being thus administered in three or four doses during the twenty-four hours. As it averages 12.713 per cent. of nitrogen this quantity corresponds to about 1500 grammes, or nearly four *funts* (3⅓ pounds) of fresh meat, reckoning this to contain 3.4 per cent. nitrogen. (*Voit.*)

The minimum administered was about half this quantity. In addition, the patients were given as much milk as they could drink, which averaged 3200 c. cm., the maximum being 5200 and the minimum 1325 c. cm. Bread and biscuits were allowed according to the patient's desire. Generally, however, they took these only at the commencement, but afterward refused them entirely. Thus the mean quantity of nitrogen ingested was 54.154 grammes, corresponding to 1600 grammes of fresh meat, the maximum of nitrogen ingested being 80.687 grammes, corresponding to 2400 grammes, or more than 3½ pounds, of fresh meat per diem.

> "Under the influence of this enormous quantity of nitrogen the transformation of albumen in the body, and consequently the excretion of nitrogen with the urine, increased very considerably. Thus the urinary nitrogen excreted daily averaged about 34 grammes, the maximum being 56.26 grammes; while before the experiment, on the ordinary hospital diet the urinary nitrogen varied from 9 to 16 grammes, according to the condition of the appetite, fever, etc.
>
> "With regard to the assimilation of nitrogen, that also increased decidedly, averaging 91 per cent. of that ingested, while previous to the experiment the amount assimilated varied from 76.7 to 88 per cent."

A table is also given showing that

> "The quantity of nitrogen assimilated per kilogramme of body during the hyperalimentation increased more than threefold, and, moreover, on the days following the hyperalimentation it was somewhat larger than it had been previously to it. . . . The appetite of the patients, even after such a moderate continuance of the treatment as I employed, usually improved to a remarkable extent. They began to finish their diet ration and asked for more! . . . whereas previously they had scarcely been able to take the half of it. The increased quantity of food ingested added to the increased assimilation produced a rapid rise in the body weight amounting on the average to 420 grammes (about fifteen ounces) per diem. The increase of weight obtained persisted, as may be seen by some of the diagrams appended, some time after the hyperalimentation had ceased, and even continued to rise still higher."

In one of the cases only, which was that of a patient who was dying, the treatment did not succeed in arresting the rapid decrease of weight.

Generally during the treatment the patients felt better, the dyspnœa disappearing, the cough and expectoration diminishing, and the nocturnal sweats being arrested. The temperature, also, showed a distinct tendency to decline. The semiliquid stools became firmer, except in the case of the dying patient and in that of another, where at first the diarrhœa increased, but stopped on the substitution of boiled for fresh milk, and, moreover, did not recur subsequently when a return was made to fresh milk. The only improvement in the physical signs was some diminution in the dry and moist râles.

The following cases will serve as examples of the observations conducted by the author:

CASE I.—S . . . noff, aged thirty-two years, trimming maker, weight on admission 39,250 grammes, of short stature, pale, feeble, greatly emaciated. No family history of phthisis. Distinct dulness in both apices, especially in the right, where bronchial breathing is heard with medium sized râles. These, however, are not universal and not very numerous. In the left apex the breathing is harsh and vesicular, and at times sibilant rhonchi are heard. Cough distressing and frequent. Expectoration slight, but containing multitudes of Koch's bacilli. Evening temperature 38.6° C. (101.3° F.). Appetite poor, semiliquid stools four or five times a day.

The patient was ordered to take the nutrient mixture, 200–250 grammes of meat powder and 2½ litres of milk being given daily. This hyperalimentation was continued for eleven days, at the end of which time the body weight had increased 1600 grammes (56½ ounces). Before the commencement of the treatment, when the patient was on the ordinary hospital diet, he assimilated a mean percentage of 76.7 of the nitrogen ingested. During the hyperalimentation this rose to 85.4 per cent., and after it it fell to 75.5 per cent. for each kilog. of body weight. He assimilated before the hyperalimentation 0.32 gramme nitrogen, during it 0.93 gramme, and after it 0.33 gramme.

From the first day of the hyperalimentation, though the patient felt better, the diarrhœa increased, and was only checked on the ninth day by the substitution of boiled for fresh milk. All the time he felt exceedingly well, the cough almost ceased, the expectoration ceased, the temperature became normal, the violent sweats were arrested, and the man was able to sleep. Four days after the treatment was discontinued the weight was found to be still increasing, the appetite was still good, and the man felt so well and strong that he left the hospital in order to resume his usual work in the factory.

CASE IV.—P . . . tseff, Vasili, aged twenty-six years, painter. No family history of phthisis. Four years ago he had abdominal typhus, after which time he felt unwell, and became more than once an in-patient in hospital. The last time he was admitted into the Abukhoff hospital on the 27th of January, 1885, with wasting, general debility, loss of appetite, cough with expectoration, and exhausting night-sweats. On the 10th of March, by the kindness of the senior medical officer, Th. Herman, he was transferred to the clinic.

The skin and mucous membrane were pale, and there was but little subcutaneous fat. Distinct changes in both apices, with well-marked cavities in the left. Sputum nummulated, secreted in considerable quantity, and containing numbers of Koch's bacilli and elastic fibres. The weight of the patient before the treatment was subject to irregular fluctuations, but with a general tendency to fall.

After the time of the first hyperalimentation, which lasted six days, he felt exceedingly well, and had gained 3000 grammes (40½ ounces) in weight, the rise continuing even after the cessation of the treatment. Subsequently he again felt worse, the hæmoptysis returning, and continuing for three days. Nine days after the first trial of the treatment the hyperalimentation was again resorted to. Again he took for six days through the stomach-tube 300 grammes of powdered meat, and 4 litres of milk, and again he immediately felt better. The diarrhœa ceased, and he increased four kilog. (141 ounces) in weight. At the end of a week after the second course of hyperalimentation the patient left the hospital confident that he was cured. His appetite had remarkably increased; his weight, however, did not remain as high as it had been, but began to fall again, though more slowly than after the first course of treatment.

The nitrogen assimilated at the time of the treatment was considerably increased, being 93.5 to 92 per cent., while previously, the other circumstances being the same, it varied from 82 to 86 per cent.

The writer concludes his interesting paper by pointing out that though the stage of enthusiasm for an indiscriminate application of this method of treatment may give place to its limitation to special classes of cases, still it must be acknowledged that we are by forced alimentation enabled in a very short length of time to accomplish that which should be the end of all treatment, the improvement of the weight and general condition of the patient, so that he has hopes that if the disease be thus attacked in its earliest stages a permanent cure may result.

As to the troublesome nature of the treatment, he remarks that all methods of treatment which are really valuable, such as sending patients away to places where the climate is suitable, or to koumiss establishments, involve a large amount of trouble, and he points out that French physicians have been able to carry out Debove's system with hospital patients so that the difficulties, to say nothing of the expense, are much less than those involved in climatic cures.

Of course, Dr. Kurloff's experiments would have been much more valuable if he could have kept the patients under observation for some weeks after the treatment, and if, too, he could have observed the results of prolonged treatment. He, Dr. Peiper, and others have, however, made out a very good case for the extension of the trial of the system to England and America, where, as we hinted before, it seems to be less known than it should be.

THE MODERN TREATMENT OF STONE IN THE BLADDER BY LITHOLAPAXY. A DESCRIPTION OF THE OPERATION AND INSTRUMENTS, WITH CASES ILLUSTRATIVE OF THE DIFFICULTIES AND COMPLICATIONS MET WITH. By P. J. FREYER, M.A., M.D., Bengal Medical Service; Civil Surgeon, Mussoorie. 8vo., pp. x. 116. London: J. & A. Churchill, 1886.

IF anything is gratifying to the leader of any great movement, it is to see the principles which he thinks true and important winning the confidence and support of others, and making way against the opposition which naturally arises against whatever is opposed to the general opinion. Such gratification has fallen in an unusual degree to the lot of Professor Bigelow, whose method of litholapaxy may be said to have revolutionized the treatment of stone in the bladder. This operation now seems to stand upon a secure footing, free from the weakness which would follow an exaggerated estimate of its applicability, and well defined in its indications and *technique*. This can be gathered from a study of what is going on all over the world, and it has recently been put into convincing and pleasing shape in the monograph of Dr. Freyer.

Dr. Freyer is an India surgeon, who, from a large and successful